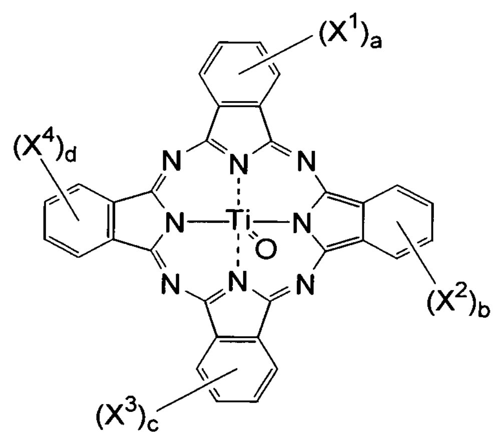
Claims

1. A titanyl phthalocyanine crystal formed by crystallizing a titanyl phthalocyanine compound, characterized in that the crystal has a maximum peak at a Bragg angle $2\theta \pm 0.2° = 27.2°$ and has no peak at 7.4° in a CuKα characteristic X-ray diffraction spectrum, and the crystal does not have a peak of a change in temperature within a range from 50 to 400℃ except for a peak associated with evaporation of adsorbed water in differential scanning calorimetry.

2. The titanyl phthalocyanine crystal according to claim 1, which has no peak at a Bragg angle $2\theta \pm 0.2° = 26.2°$ in a CuK α characteristic X-ray diffraction spectrum.

3. The titanyl phthalocyanine crystal according to claim 1, which is formed from a titanyl phthalocyanine compound represented by the formula (1):



(1)

wherein X^1, X^2, X^3 and X^4 are the same or different and each represents a halogen atom, an alkyl group, an alkoxy group, a cyano group, or a nitro group, and a, b, c and d are the same or different and

each represents an integer of 0 to 4.

4. The titanyl phthalocyanine crystal according to claim 1, wherein a crystal recovered after dipping in an organic solvent for 7 days has a maximum peak at a Bragg angle $2\theta \pm 0.2° = 27.2°$ and has no peak at 7.4° in a CuKα characteristic X-ray diffraction spectrum.

5. The titanyl phthalocyanine crystal according to claim 4, wherein a crystal recovered after dipping does not have a peak of a change in temperature within a range from 50 to 400℃ except for a peak associated with evaporation of adsorbed water in differential scanning calorimetry.

6. The titanyl phthalocyanine crystal according to claim 4, wherein a crystal recovered after dipping has no peak at a Bragg angle $2\theta \pm 0.2° = 26.2°$ in a CuKα characteristic X-ray diffraction spectrum.

7. The titanyl phthalocyanine crystal according to claim 4, wherein the organic solvent is at least one selected from the group consisting of tetrahydrofuran, dichloromethane, toluene and 1,4-dioxane.

8. A method of producing the titanyl phthalocyanine crystal of claim 1, which comprises the following steps:

a pigmentation pretreatment step of adding a titanyl phthalocyanine compound in an aqueous organic solvent, stirring under heating for a fixed time, and allowing the resulting solution to stand for a fixed time under the conditions at a temperature

lower than that of the above stirring process, thereby to stabilize the solution;

a recrystallization step of removing the aqueous organic solvent from the solution to obtain a crude crystal of the titanyl phthalocyanine, dissolving the crude crystal of the titanyl phthalocyanine in a solvent, adding dropwise the solution in a poor solvent to recrystallize the titanyl phthalocyanine compound, and then subjecting the recrystallized compound; and

a pigmentation step of dispersing the low crystalline titanyl phthalocyanine compound obtained by recrystallization in an organic solvent in the presence of water, and stirring the solution at 30 to 100℃ for 5 to 60 hours.

9. A method of producing the titanyl phthalocyanine crystal of claim 1, which comprises the following steps:

a pigmentation pretreatment step of adding a titanyl phthalocyanine compound in an aqueous organic solvent, stirring under heating for a fixed time, and allowing the resulting solution to stand for a fixed time under the conditions at a temperature lower than that of the above stirring process, thereby to stabilize the solution;

a step of removing the aqueous organic solvent from the solution to obtain a crude crystal of the titanyl phthalocyanine, and treating the crude crystal of the titanyl phthalocyanine according to acid-paste method; and

a pigmentation step of dispersing the treated low crystalline

titanyl phthalocyanine compound in an organic solvent in the presence of water, and stirring the solution at 30 to 100℃ for 5 to 60 hours.

10. An electrophotosensitive material comprising a conductive substrate and a photosensitive layer formed on the substrate, the photosensitive layer containing the titanyl phthalocyanine crystal of claim 1 as an electric charge generating material.

11. The electrophotosensitive material according to claim 10, wherein the photosensitive layer is a single-layer type photosensitive layer containing the titanyl phthalocyanine crystal, at least one of a hole transferring material and an electron transferring material, and a binding resin in the same layer.

12. The electrophotosensitive material according to claim 10, wherein the photosensitive layer is a multi-layer type photosensitive layer comprising at least two layers among an electric charge generating layer containing the titanyl phthalocyanine crystal, an electric charge transferring layer containing at least one of a hole transferring material and an electron transferring material, and a photoconductive layer containing the titanyl phthalocyanine crystal and at least one of a hole transferring material and an electron transferring material, which are mutually laminated.